

What is claimed is:

1. A light weight hollow thermoplastic board, which comprises:

a first planar sheet;

a second planar sheet; and,

5 a plurality of ribs, each of said ribs having a plurality of
fixed gas pockets located therein;

wherein said first planar sheet and said second planar are spaced
apart by and are interconnected by said ribs.

10 2. The light weight hollow thermoplastic board of claim 1 wherein said
board is formed in an integral form.

3. The light weight hollow thermoplastic board of claim 1 wherein said
ribs are positioned at right angles to said first planar sheet and said
15 second planar sheet and create rectangular cross-sectioned passageways
therebetween.

4. The light weight hollow thermoplastic board of claim 1 wherein said
ribs are positioned at angles other than right angles to said first planar
20 sheet and said second planar sheet and create trapezoidal cross-sectioned
passageways therebetween.

5. The light weight hollow thermoplastic board of claim 1 wherein said ribs are arcuated and create cross-sectioned passageways therebetween selected from the group consisting of elliptical and circular.

5 6. The light weight hollow thermoplastic board of claim 1 wherein said ribs are u-shaped.

10 7. The light weight hollow thermoplastic board of claim 1 wherein said board is made of a thermoplastic polymer selected from the group consisting of olefins, styrenes, vinyl chlorides, acrylics, polycarbonates and ethylene terephthalates.

15 8. The light weight hollow thermoplastic board of claim 7 wherein said thermoplastic polymer is selected from the group consisting of polypropylenes, linear polyethylene, branched polyethylene and copolymers thereof.

20 9. A process for producing a light weight hollow thermoplastic board having a first planer sheet and a second planer sheet which are spaced apart by and interconnected by longitudinally extended ribs, which comprises:

extruding molten thermoplastic through an extruder having a die assembly with a die with a cavity having a cross-section corresponding

to a desired external shape of a thermoplastic board and having mandrels within said cavity to create a soft board having a plurality of passageways and extended ribs between a first planar sheet and a second planar sheet, such that thermoplastic is extruded at a first planar sheet area, a second planar sheet area and a rib area;

introducing a blowing agent into thermoplastic being extruded at said rib area so as to create gas pockets in said thermoplastic being extruded at said rib area; and,

advancing the resulting soft board to a sizer and cooler assembly to set the first dimensions of the soft board, to cool it to a rigid board and to establish a plurality of locationally fixed gas pockets in said extended ribs.

10. The process of claim 9 wherein said blowing agent is a physically introduced blowing gas.

11. The process of claim 10 wherein said blowing agent is introduced into said rib area thermoplastic at pressure above ambient pressure.

12. The process of claim 10 wherein said blowing agent is selected from the group consisting of carbon dioxide, nitrogen and inert gases.

13. The process of claim 9 wherein said blowing agent is a chemical

blowing agent.

14. The process of claim 13 wherein there are separate thermoplastic feed hoppers for said sheet area and said rib area, and said blowing agent is introduced into said thermoplastic that is fed through said feed hopper for said rib area.

15. The process of claim 13 wherein said blowing agent is elected from the group consisting of organic blowing agents and inorganic blowing agents.

16. The process of claim 15 wherein blowing agent is an organic blowing agent selected from the group consisting of azodicarbonamide, N, N'-dinitrosopentamethylene tetramine, N,N'-dinitroso-N,N'-dimethyl terephthal amide, benzene sulfonyl hydrazide, benzene-1,3-disulfohydrazide, and terephthalic azide.

17. The process of claim 15 wherein said blowing agent is added to thermoplastic for the rib area of extrusion in an amount of about 0.01 to about 5 % based on total weight.

18. The process of claim 9 wherein said process further includes

annealing said rigid board in an oven.

19. The process of claim 9 wherein said board is made of
thermoplastic polymer selected from the groups consisting of olefins,
styrenes, vinyl chlorides, acrylics, carbonates and ethylene
terephthalates.

20. The process of claim 19 wherein said thermoplastic polymer is
selected from the group consisting of the group consisting of
polypropylenes, linear polyethylene, branched polyethylene and
copolymers thereof.

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